



Bikini Atoll (Baker), 1946

Nuclear Realities: How credible are your DISADs and ADVs?

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Nuclear Realities

- **AFF and NEG Arguments**
- **Facts and Figures**
- **Nuclear Theology & Arms Control**
- **History Lessons**
- **Fighting back?**
- **Potential Sources**

DISADs and ADVs?

- Logic train of a 'AFF' will cause global nuclear war' DISAD?
- Logic train of a 'AFF' will prevent global nuclear war' ADV?
- Key elements and assumptions of both?
- Faulty premises and/or shaky assumptions?



Trident launch from HMS Vigilant, 2012

Some Fact Checking



TU-95 (Bear)

- How many countries have nuclear weapons?
- How many weapons do they have?
- What sorts of weapons (and delivery systems) do they have?
- How powerful are nuclear weapons?

Who has nuclear weapons?

- U.S., Russia, UK, France, and China
- India and Pakistan
- North Korea (how real?)
- Israel (undeclared)
- Has any state ever given up its nuclear weapons? If so, which one(s)?
- Who isn't on this list?
 - How close are they?



Pakistani Ghauri-II (MRBM)

How many nuclear weapons are there?



BBC, 2012

- U.S.: +/- **4800** deployed (down from 31,000).
- Russia: +/- **4500** deployed (down from 45,000).
- UK, France, China: +/- 160, 290, and 250 deployed.
- India, Pakistan: +/- 100 ea.
- Israel: 75-200
- North Korea: <10

Arms Control Association
www.ArmsControl.org
June 2014

Who's got what? And why? And how?

Figure 1: India's Nuclear-Capable Delivery Vehicles

LAND-BASED BALLISTIC MISSILES

PRITHVI-1

Range: 150-600 kilometers
Payload: 500-1,000 kilograms
Deployed

AGNI-1

Range: 700 kilometers
Payload: 1,000 kilograms
Deployed

AGNI-2

Range: 2,000 kilometers
Payload: 800-1,000 kilograms
Deployed

AGNI-3

Range: 3,000+ kilometers
Payload: 1,500 kilograms
Deployed

AGNI-4

Range: 3,500 kilometers
Payload: 1,500 kilograms
Under development

AGNI-5

Range: 5,000 kilometers
Payload: 1,500 kilograms
Under development

AIRCRAFT

MIRAGE 2000H

JAGUAR IS/IB

MIG-27 (nuclear role suspected)

RAFALE (to be purchased from France)

SUBMARINE-LAUNCHED BALLISTIC MISSILES

K-15

Range: 300-700 kilometers
Payload: 300-700 kilograms
Developed but not deployed (waiting for submarine testing to be completed)

Sources: Hans M. Kristensen and Robert S. Norris; Aaron Karp

Arms Control Association

- U.S. and Russia = Global 'war fighting' triad.
- UK (x1), France (x3), and China (x2+) = Mostly regional 'deterrent' systems (China +/- 60 ICBMs).
- India, Pakistan, Israel, and North Korea = For tough neighborhoods.
- Strategic vs. tactical?
 - A distinction without a difference?
- Is the 'triad' still relevant?
 - In the U.S.-Russia context?
 - Elsewhere?

How much bang for the buck?



Hiroshima, 1945

- Hiroshima > much larger warheads > smaller warheads.
- 1979 OTA study: U.S. = 35-77% dead; USSR = 20-40% dead.
- Cold War stockpiles generated 'nuclear winter' and similar apocalyptic scenarios. Real?
- Post-Cold War stockpiles still significant, but would they truly 'destroy the world'?
- Consider: John Mueller, **Atomic Obsession**, 2009.

Nuclear Theology

- War-fighting?
- Escalation theories and 'flexible response'?
- Compellence?
- Deterrence:
 - Mutually Assured Destruction (MAD)?
 - Counterforce vs. Countervalue?
 - Credibility?
- Missile defense?



Dr. Strangelove, 1964

Nuclear Arms Control

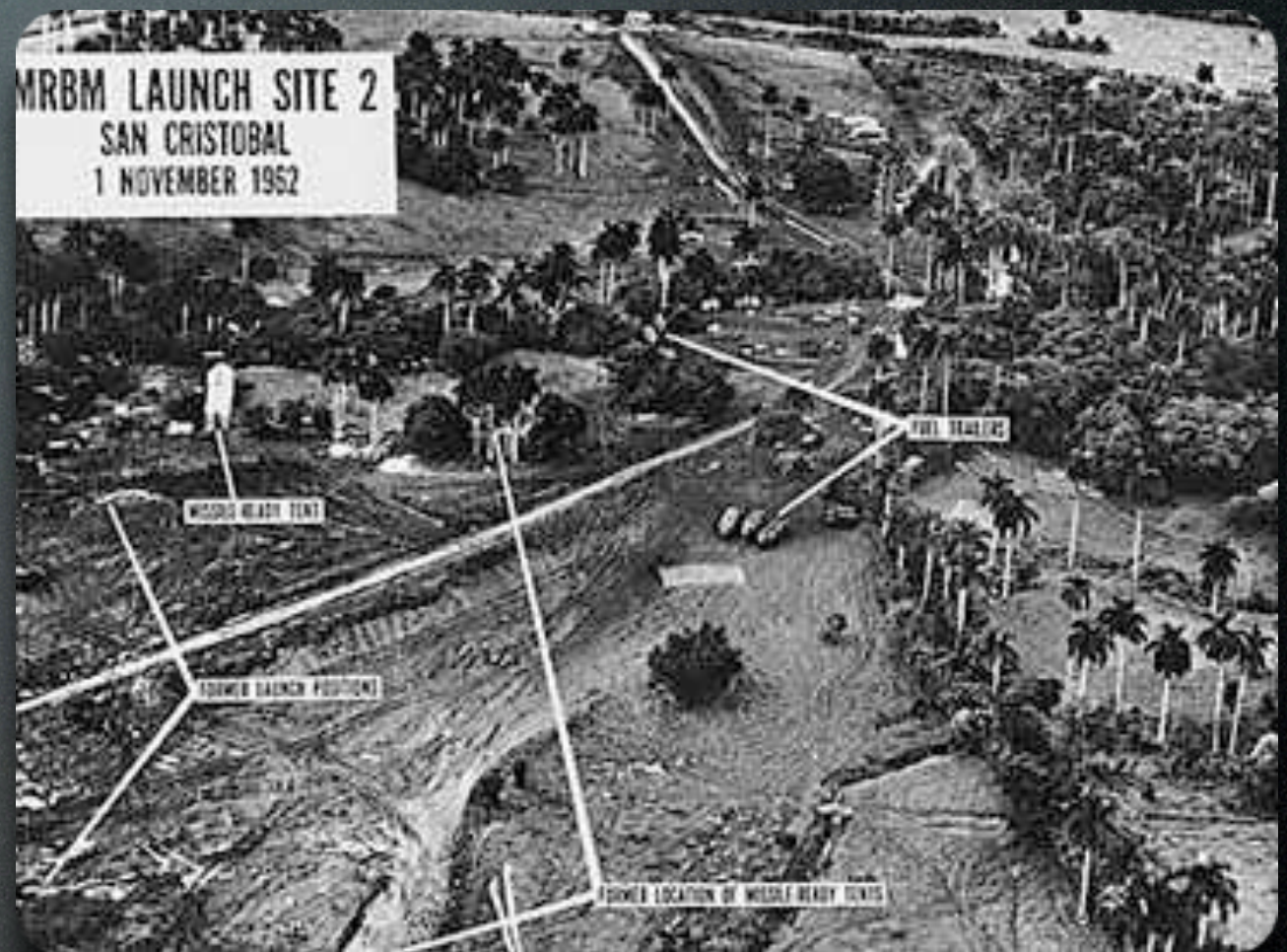


Pershing II Destruction (INF)

- LTBT, NPT, TTBT, CTBT
- Deep Seabed, Antarctic, and Outer Space treaties
 - Regional NWFZs?
- NSG, MTCR, COCOM > Wassenaar Regime
- Hotline and INCSEA
- ABM and INF
- SALT I and II / START I and II / New START

Cold War Close Calls

- Cuban Missile Crisis (October 1962)
- Yom Kippur War (October 1973)
 - Israeli first use?
 - U.S.-Soviet confrontation.
- USSR's Operation RYAN & NATO's Able Archer Exercise (November 1983)
- **Were any of these caused by an economic crisis or political collapse?**



Cuba, 1962

Post-1945 Economic Crises



Moscow currency exchange queue, 1998

- First oil crisis, 1973-75
- Global recessions in 1975, 1982, and 1991.
- Second energy crisis, 1981-82
- Latin American debt crisis, 1982
- Asian financial crisis, 1997
- Russian defaults and currency crises, 1998 and 2008
- World food crisis, 2007-08
- Financial crisis of 2007-08 and subsequent 'Great Recession'
- Eurozone crisis, 2010
- **Did any of these generate nuclear war or even threats thereof?**

Post-1945 Political Crises

- Berlin (blockade and wall).
- Korean War.
- 1968.
- Watergate.
- Collapse of Communism in Central and Eastern Europe and the USSR.
- Tiananmen Square.
- **Did any of these lead to nuclear war?**



Tank Man (Tiananmen Square), 1989

Nuclear Terrorism?

- Steal or buy a bomb?
- Fabricate a 'conventional' nuclear weapon:
 - Fissile material?
 - Physics package?
 - Delivery system?
- Detonate a 'dirty' bomb?
- Destroy or damage a nuclear power plant?



1991



2002

Fighting Back: Some Thoughts and Options



Mirage 2000N

- Room for a reality-based approach?
- CX strategies?
- Constructing full-fledged counter-arguments:
 - **Threshold for nuclear use?**
 - **Severity of nuclear war?**
 - **Credibility of the threat?**
- Avoiding internal contradictions?

Potentially Useful Sources

- Arms Control Association
(www.armscontrol.org)
- Bulletin of the Atomic Scientists
(www.thebulletin.org)
- Federation of American Scientists (www.fas.org)
- The Brookings Institute
(www.brookings.edu)
(Steven Pifer & Michael O'Hanlon)
- Center for Strategic and International Studies
(www.csis.org)
- International Security
(www.mitpressjournals.org/loi/isec)
- War on the Rocks
(www.warontherocks.com)
- Foreign Policy
(www.foreignpolicy.com)
- Council on Foreign Relations
(www.cfr.org)
- Rand Corporation
(www.rand.org)
- Woodrow Wilson International Center for Scholars
(www.wilsoncenter.org)
- Carnegie Endowment for International Peace
(www.carnegieendowment.org)